

**California MLPA North Coast Project
1 February 2010**

External Proposal Title: “Northern Redwoods Oceanic Array”

Contributing and Supporting Organizations:

- Conservation First
- Natural Resource Defense Council
- Defenders of Wildlife
- Sierra Club, Mendocino Group
- School of Natural Resources, Mendocino High School
- Coastal Land Trust
- Coast Action Group

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Please note: Both Linda Perkins and Mary Walsh have “Intent to Submit Array” forms on file with the MLPAL.

California MLPA North Coast Project
Narrative Rationale for the North Coast Regional Stakeholder Group (NCRSG)
Marine Protected Area (MPA)
External Proposal — “Northern Redwoods Oceanic Array”
1 February 2010

Proposal Rationale:

The primary goal of this proposal (the “Northern Redwoods Oceanic Array”) is to conserve and protect marine resources through the science-based development of a backbone of marine protected areas that enhances habitat and factors in potential socio-economic impacts and benefits. The proposal contributors studied the guidelines for development of an array on the North Coast, took numerous anecdotal reports from people potentially affected by this proposal, and from this information, crafted an array that stretches from the Oregon/California border to just north of Point Arena. Given the information currently available from various sources, the array proposed here constitutes our best effort at approaching the guidelines that includes Ecotrust and Department of Fish and Game documents, MarineMap data layers, and interviews with local ocean users. We understand that members of the Regional Stakeholder Group will be able to improve on this array as more information, including the evaluation by the Scientific Advisory Team (SAT), becomes available.

We attempted to create an array that does the following:

- Comes close to meeting the science guidelines and MLPA goals
- Includes high quality habitats and centers of biodiversity and productivity
- Keeps MPAs as far from harbors as possible to create “safe areas” near those ports
- Minimizes socio-economic impacts to the region
- Selects areas that can provide long-term benefits as well as “science laboratory” sites
- Recognizes that ceremonial gathering and other uses by indigenous tribes should not be impeded by marine protected area designation
- Supports the intent of the “Tribal External Array” narrative developed by the Smith River Rancheria

Additionally, we designed the array by seeking input from constituents from the three counties in the region. We eventually blended a draft array from discussions with representatives of the both sectors. During the process, it became clear that the regional split at the Mattole River allowed both sections together to encompass the full diversity of habitat on the North Coast. What resulted from these discussions is an array that we believe is credible and feasible in terms of adaptive management planning and regulations enforcement. A variety of MPAs were developed that underline this philosophy. For example, the Point Cabrillo cluster of MPAs presents an opportunity to study the interrelationship between areas currently closed to urchin harvest (South Caspar Bay—a state special urchin closure site), near an area where urchin harvesting is allowed (south of Russian Gulch). Today, between these two zones, a small SMCA exists off the Point Cabrillo lighthouse. The Northern Redwoods Oceanic proposal expands the existing conservation area north and south and makes it an SMR in the on-shore section, while adding a SMCA designation to the off- shore water to allow salmon trolling. This is a good example of

how existing study areas can be expanded and monitored over time to help assess the impacts urchin harvest has on other species.

Further north, we understand from our discussions with other stakeholders that proposed Usal SMR would have some impacts to crabbing. And yet, we believe the placement is warranted due to spacing and habitat replication needs. This is a remote area, seldom visited by land access due to extremely steep cliffs and few roads. The Usal Beach area to the north is the only public access point near Usal Creek. The rocky shoreline of this area makes it a very desirable study area for birds, mammal, invertebrates, and other species as well as an ecological hotspot worth protecting.

While all the data for substrates is not currently available for the Punta Gorda area, we expanded the existing reserve there. This SMR captures submarine canyons and a variety of unique habitats, including important marine bird and mammal areas and the only occurrence of “blue” hydrocoral we’re aware of in relatively shallow water. The area can be accessed, but is generally lightly used for recreational fishing. Thus, because of the strategic location of this area near the western-most point in California, and its importance as an upwelling area, we believe this section of the coast deserves protection and future study. This area at Punta Gorda will serve as an example of how currently existing protected areas can help in the process of understanding how these areas contribute to the marine protection objectives of the MLPA.

Throughout the process of creating this proposal, we also made tough decisions *not* to protect certain areas, despite the likely long-term benefits of protection in these places, to take into account potential short-term socio-economic impacts or other concerns. For example, we omitted protected areas at the following places: (1) We left open Mendocino headlands and bay, an excellent example of rocky habitat and kelp that most likely serves as a highly productive nursery area, to accommodate urchin and seaweed harvesters, abalone and recreational fishing; (2) We left open the area in the lee of Patrick’s Point, a biodiversity hotspot and important foraging area for a diverse array of bird species, to accommodate local fishing and boating safety; (3) We left open Castle Rock and the area off Point Saint George—the Farallones of the north coast, a biodiversity hotspot and a productivity center for rockfish—to allow for a ten-mile safety zone around Crescent City Harbor.

Even with these significant omissions, we believe this array would create significant conservation value, and we submit it in the interests of learning as much as possible, through the Science Advisory Team evaluation, about alternative concepts for protected areas. We hope it provides useful information for the Regional Stakeholder Group.

Finally, our proposal did not change or modify the two existing marine conservation areas at Van Damme or MacKerricher State Parks. These two protected areas will continue to serve as small conservation study areas adjacent to parks areas that receive heavy recreational use. Please note that three of the existing MPAs in the region, Punta Gorda, Point Cabrillo, and Russian Gulch SMCAs, are either expanded in this proposal, or incorporated into the new design this plan offers.

California Marine Life Protection Act Initiative
MLPA North Coast Study Region: Round 1 Evaluations
Staff Summary of Area and Habitats in External Proposed MPA Array D
Date Created: March 5, 2010

Table 1. Summary of MPAs by Designation for External Proposed MPA Array D

Type of MPA ^a	# of MPAs	Area (mi ²)	% of Study Region
State Marine Reserve (SMR)	7	93.16	9.1%
State Marine Recreational Managed Area (SMRMA)	1	1.20	0.1%
State Marine Park (SMP)	2	0.27	<0.1%
State Marine Conservation Area (SMCA)	8	84.09	8.2%
All MPAs combined	18	178.72	17.4%

^a These are proposed marine protected area (MPA) designations, NOT levels of protection assigned by the MLPA Master Plan Science Advisory Team (SAT). SMRMA is not an MPA designation, but rather a marine managed area designation.

Table 2. Summary of MPAs by Level of Protection for External Proposed MPA Array D

Level of Protection (LOP)	# Proposed	Area (mi ²)	% of Study Region
Very High ^b	8	94.36	9.2%
High	2	5.91	0.6%
Moderate-High	4	76.06	7.4%
Moderate	1	1.60	0.2%
Low ^c	3	0.79	0.1%
Total	18	178.72	17.4%

^b The "Very High" category includes MPAs with SMR designation, as well as SMRMA designations.

^c The "Low" category groups together MPAs that are assigned a moderate-low and low level of protection.

Table 3. Individual MPAs in External Proposed MPA Array D

MPA Name	Size ^d (mi ²)	Alongshore Span ^e (mi)	Depth Range ^f (ft)
Pyramid Point SMR ^g	20.99	4.7	0 - 124
False Klamath SMCA ^g	13.14	2.9	0 - 121
Reading Rock SMR ^g	18.64	6.3	90 - 253
Reading Rock SMCA ^g	9.52	3.0	0 - 101
Patrick's Point SMCA ^g	26.70	6.5	0 - 256
South Humboldt Bay SMCA ^g	1.60	N/A	Depth data not available
South Bay Estuary SMRMA ^g	1.20	N/A	Depth data not available
Gorda SMR ^g	22.73	5.8	0 - 1667
Big Flat SMCA ^g	26.71	6.9	0 - 1110
Usal SMR ^g	26.30	6.8	0 - 394
Ten Mile River Estuary SMR ^g	0.18	N/A	Depth data not available
MacKerricher SMCA ^g	0.72	3.0	0 - 38
Point Cabrillo Offshore SMCA	5.69	2.5	276 - 404
Point Cabrillo SMR ^g	4.21	2.5	0 - 306
Big River Estuary SMP ^g	0.22	N/A	Depth data not available
Van Damme SMCA ^g	0.02	0.2	0 - 11
Albion River Estuary SMP ^g	0.05	N/A	Depth data not available
Navarro River Estuary SMR ^g	0.09	N/A	Depth data not available

^d Statue mile is the unit of measurement used for this analysis.

^e Alongshore span measured as direct line from one end of the MPA to the other, roughly paralleling the coastline. An alongshore span is not calculated for estuarine MPAs

^f Comprehensive bathymetric data for all estuaries is not available. Though bathymetric data do exist in portions of some estuaries, depth ranges are not provided for estuarine MPAs for consistency in evaluations.

^g Tribal uses are proposed in this MPA. However, pending further policy guidance, these uses are not currently considered in assigning the level of protection for this MPA.

Table 4. Habitat Representation in External Proposed MPA Array D

Habitat ^h	SMR		SMRMA		SMP		SMCA		Total MPAs	
	Area	%	Area	%	Area	%	Area	%	Area	%
Intertidal										
Sandy or gravel beach*	8.28	5%	0.00	0%	1.05	1%	19.36	11%	28.70	16%
Rocky shores*	19.54	12%	0.00	0%	0.82	1%	8.35	5%	28.71	18%
Hardened shores*	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
Coastal marsh*	2.94	3%	1.29	1%	3.55	4%	1.63	2%	9.40	11%
Coastal marsh	0.06	2%	0.05	2%	0.04	1%	0.04	1%	0.19	5%
Tidal flats*	0.33	<1%	4.79	7%	0.28	<1%	1.08	2%	6.48	10%
Seagrass beds										
Humboldt Eelgrass	0.00	0%	0.08	1%	0.00	0%	0.33	5%	0.40	6%

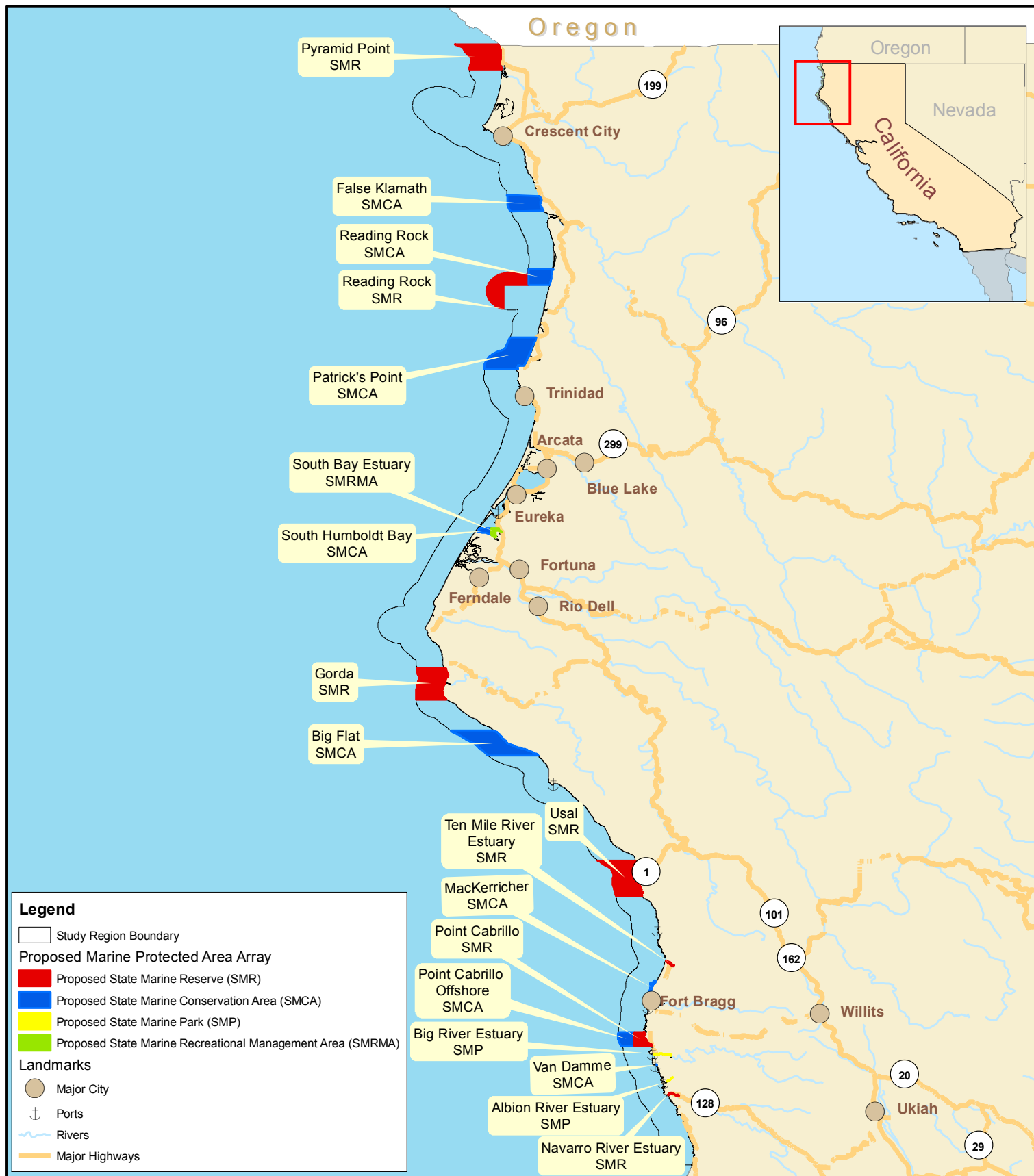
Habitat ^h	SMR		SMRMA		SMP		SMCA		Total MPAs	
	Area	%	Area	%	Area	%	Area	%	Area	%
Estuarine										
Estuary	0.28	1%	1.20	3%	0.27	1%	1.60	4%	3.34	8%
Hard bottom										
0-30 meters proxy ^{*,i}	6.40	12%	0.00	0%	0.00	0%	1.17	2%	7.58	14%
0-30 meters	4.29	10%	0.00	0%	0.00	0%	1.11	3%	5.40	13%
30-100 meters	2.48	5%	0.00	0%	0.00	0%	0.17	<1%	2.64	6%
100-200 meters	0.27	27%	0.00	0%	0.00	0%	0.06	6%	0.33	33%
>200 meters	0.05	52%	0.00	0%	0.00	0%	0.01	13%	0.06	65%
Soft bottom										
0-30 meters proxy ^{*,i}	14.00	9%	0.00	0%	0.00	0%	19.18	12%	33.18	21%
0-30 meters	22.20	9%	0.00	0%	0.00	0%	29.81	12%	52.01	21%
30-100 meters	47.30	11%	0.00	0%	0.00	0%	32.35	8%	79.65	19%
100-200 meters	7.09	11%	0.00	0%	0.00	0%	11.16	18%	18.26	29%
>200 meters	2.40	31%	0.00	0%	0.00	0%	0.59	8%	2.98	39%
Unknown										
0-30 meters proxy ^{*,i}	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
0-30 meters	6.74	4%	1.20	1%	0.25	<1%	8.81	5%	17.00	10%
30-100 meters	0.32	1%	0.00	0%	0.00	0%	0.02	<1%	0.34	1%
100-200 meters	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
>200 meters	0.02	10%	0.00	0%	0.00	0%	0.00	0%	0.02	10%
Other										
Offshore rocks*	12.84	9%	0.00	0%	0.00	0%	5.83	4%	18.67	13%
Linear kelp*	4.74	9%	0.00	0%	0.00	0%	1.97	4%	6.71	13%

^h Note: Habitats are measured as an area (mi²) except for those with a * notation. Habitats with a * notation are expressed in linear units (mi).

ⁱ There is limited fine scale data for nearshore habitat, shallower than 10-20 meters depth, in the north coast study region. A proxy for this area was created using a line parallel to the coast and classifying the substrate as either hard or soft substrate depending on the dominant habitat type for the 0-30 meter depth zone in that area based on available fine-scale substrate data, shoreline type, kelp abundance, and expert knowledge.

MLPA North Coast Study Region

Round 1- North Coast External Proposed MPA Array D



California Marine Life Protection Act (MLPA) Initiative

Projection Information:

Name: NAD 1983 California Teale Albers
 Projection: Albers
 Datum: North American 1983

Printing Date: February 17, 2010

Created by Marine Map Cartographic Division, UCSB.

For more information, visit <http://www.northcoast.marinemap.org/marinemap/>

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

1

Name of Array: North Coast External Proposed MPA Array D (ExD)

Author: Northern Redwoods Oceanic

Bioregions:

Northern: Oregon/California border to Mattole River

Southern: Mattole River to Alder Creek near Point Arena

Total number of MPAs:

18

Number of SMRs:

7

Number of SMCAs:

8

Number of SMPs:

2

Number of SMRMAs:

1

Number proposing tribal uses

15

MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Pyramid Point SMR	73927	Northern Bioregion	State waters from the Oregon Border(42 00') southward to rocks immediately south of the Smith River mouth(42 56')(not including the Smith River), from, 42 00.00N/124 12.800W SSE to 41 59.700N/124 12.600W, S to 41 59.400N/ 124 12.600W, SSE to 41 59.200N/124 12.400W, S to 41 57.700N/124 12.400W, SSW to 41 57.700N/124 12.500W, SSW to 41 57.200N/124 12.700W, W to 41 57.200N/124 12.600W, S to 41 57.100N/124 12.600W, W to 41 57.100N/124 12.700W, to 41 57.00N/124 12.600W, SSE to 41 56.900N/124 12.500W, S to 41 56.700N/124 12.500, SSE to 41 56.00N/124 12.600W,41 56.700N/124 12.500 to 41 56.00N/124 12.300.	SMR	Very high	Yes	Take of all living marine resources is prohibited.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.
False Klamath SMCA	73924	Northern Bioregion	None specified	SMCA	Moderate high	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of Dungeness crab by hoop net; Dungeness crab by diving; and Dungeness crab by trap. 2. The commercial take of Dungeness crab by trap.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area. Traditional Tribal subsistence and ceremonial uses shall be allowed.

SMCA=state marine conservation area SMP=state marine park SMRMA=state marine recreational management area SMR=state marine reserve TBD=to be determined

* Levels of protection assigned do not take into account proposed Tribal uses.

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Pyramid Point SMR	N/A	<p>The Pyramid Point SMR is proposed by the Del Norte MPA Work Group and based on the following Goals: G1,G2,G3,G4,G5,G6.</p> <p>Protects a diversity of habitats from the Oregon Border to the Smith River, seaward to federal waters. Includes rocky shores, beaches, shallow reef, soft bottom, and kelp forest habitats, a large off-shore island (Prince Island), and several off-shore rocks important for sea bird colonies and waterfowl (Aleutian geese). The reserve will enhance protections for marine mammals and Chinook salmon, steelhead and coastal cutthroat trout, and Threatened southern Oregon/Northern California Coastal Coho stocks, and protect kelp forest, red tail surf perch, smelt, nearshore rockfish, red abalone, razor clams and Dungeness crab.</p>	<p>Provides clear and enforceable boundaries with abundant coastal road, highway and trail access and vantage points. Provides vessel access (Port of Brookings, OR) for study or enforcement. Reduces distance from Crescent City to fishing grounds and improves safety of Crescent City fishers. Reduces economic impacts to sport and commercial fisheries in California's highest poverty level area. This SMR is clustered with the Pyramid Point SMCA and designed to recognize Native American traditional tribal shore uses that have occurred for thousands of years. Traditional Native American uses of this area, including subsistence and ceremonial shore use, have occurred since time immemorial and those uses are considered de minimis.</p>
False Klamath SMCA	N/A	<p>This Conservation Area helps protect the rocky shoreline along this section of the coast. Important hard substrate exists here as well as important kelp and finfish habitat.</p> <p>Protected area helps capture high benthic species diversity & maintain species diversity & abundance characteristic of north coast region north of Punta Gorda.</p>	None specified

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MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Reading Rock SMR	73931	Northern Bioregion	MPA boundaries: North: 41 24.000 minutes to state water lboundary (Extension of inland MPA) then following state water boundary. West: Following state water line to 41 17.600 minutes North 124 12.000 minutes West South: Straight lines connecting the following points: 41 17.600 minutes North 124 12.000 minutes West, 41 21.400 minutes North 124 12.000 minutes West, 41 21.400 minutes North 124 08.000 minutes West East: 124 08.000 minutes (West boundary of Inland MPA)	SMR	Very high	Yes	Take of all living marine resources is prohibited.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.
Reading Rock SMCA	73932	Northern Bioregion	MPA boundaries: North: 41 24.000 minutes (Approximation of parking lot at end of road) West: 124 08.000 minutes (Approximation of 3nm state water boundary) South: 41 21.400 minutes (Approximation of Lagoon and Creek entrance) East: Mean high tide line	SMCA	Moderate high	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of Dungeness crab by hoop net; Dungeness crab by diving; and Dungeness crab by trap. 2. The commercial take of Dungeness crab by trap.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.

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California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Reading Rock SMR	N/A	This SMR will protect a diverse number of species as well as a unique and complex habitat. It will improve fish productivity in a SMR to benefit local rockfish fishing outside the MPA (G3). Other species to benefit include; halibut, harbor seals, sealions, sharks, mussels, rays, kelp, murre, guillemots, cormorants, auklets, lingcod, cabezon, and kelp greenling.	None specified
Reading Rock SMCA	N/A	Reading Rock SMCA is an area that is rich in beach and soft bottom habitats. Significant nursery area for Dungeness crab, and numerous rockfish & flatfish species. (G2)	None specified

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MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Patrick's Point SMCA	73921	Northern Bioregion	This SMCA is between the coastline and state waters, between N41 13" and N41 08".	SMCA	Moderate high	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of Dungeness crab by hoop net; and Dungeness crab by trap. 2. The commercial take of Dungeness crab by trap.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area. All traditional uses will be allowed to continued unimpeded.
South Humboldt Bay SMCA	73922	Northern Bioregion	East : 124 14 North : 40 42.5 West : 124 16.2 South boundary on the banks of the estuary. (high tide mark)	SMCA	Moderate	Yes	The take of all living marine resources is prohibited except the recreational take of clams by intertidal hand harvest.	Hunting of waterfowl. All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.
South Bay Estuary SMRMA	73923	Northern Bioregion	North : 40 42.5 West : 124 14 South : 40 41 East into the Slough : 124 12.2	SMRMA	Very high	Yes	Take of all living marine resources is prohibited.	Hunting wildlife is also allowed. All non-extractive uses are permitted. All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area. Historical native practices in the South Bay are allowed.

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MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Patrick's Point SMCA	N/A	<p>This preferred size MPA extends to the state waters line, providing connectivity from nearshore to both deeper waters and Big Lagoon. Additionally, the Patrick's Point SMCA preserves rocky habitat home to a number of fish species, to marine mammals including Steller sea lions, and to a sizable seabird colony.</p> <p>Proximity to the state park allows for co-management opportunities and enhanced enjoyment by recreational users including both local and visiting kayakers and surfers.</p>	<p>Of special note: Patrick's Point has special significance to the Yurok tribe. All traditional uses will be allowed to continued unimpeded.</p> <p>Further, because of the Trinidad region's economic dependence on Dungeness Crab, that species has been designated as allowable take.</p>
South Humboldt Bay SMCA	N/A	<p>This estuary habitat is unique due to its proximity to the Humboldt Wildlife Refuge and the SMMR South Humboldt Bay. Pairing two MPAs with separate regulations with close proximity to the Humboldt Wildlife Refuge allows for a rare and important research. Monitoring the two MPAs will allow for comparison in the impact each MPA type.</p>	<p>The Marine Reserve is located in the South portion of Humboldt Bay, an area of the Bay that has little to no socioeconomic impacts for the community. This SMCA allows clamming, waterfowl hunting and Historical Native practices.</p>
South Bay Estuary SMRMA	N/A	<p>This estuary habitat is unique due to its proximity to the Humboldt Wildlife Refuge. It is important to pair protection of the estuary system with existing protected areas on shore to maintain natural ecological linkages and recognize their critical role in ecosystem services. This also allows for rigorous monitoring due to the proximity of the existing research facility on land along the banks of the estuary.</p> <p>This area is critical habitat for seabirds, migratory waterfowl, plants, Harbor Seals and other marine mammals, and it is an important nursery for many marine and estuary fishes, including halibut. There are extensive opportunities for ongoing research and public education including already existing activities by local schools, universities and interest groups. Furthermore, this SMR can enhance non-consumptive recreational opportunities like kayaking and birdwatching.</p>	<p>The Marine Reserve is located in the South portion of Humboldt Bay, an area of the Bay that has little to no socioeconomic impacts for the community.</p>

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MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Gorda SMR	73929	Southern Bioregion	The Northern Boundary = 40 20'N (The Brothers Rock formation) The Southern Boundary = 40 15' (Gorda Rock)	SMR	Very high	Yes	Take of all living marine resources is prohibited.	All species protected. All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.
Big Flat SMCA	73928	Southern Bioregion	Northern Boundary = 40 10'N Southern Boundary = 40 6'N	SMCA	Moderate high	Yes	The take of all living marine resources is prohibited except: 1. The recreational take of salmon by troll. 2. The commercial take of salmon by troll; and Dungeness crab by trap.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.
Usal SMR	73926	Southern Bioregion	Northern Boundary = 39°49.2"N (Shoreline Rock south of Usal Beach) Southern Boundary = 39°43'4"N (Cotteneva Rock)	SMR	Very high	Yes	Take of all living marine resources is prohibited.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area. All take prohibited except for tribal traditional methods of collection.
Ten Mile River Estuary SMR	73935	Southern Bioregion	Mouth of Ten Mile River to three miles inland in estuary waters.	SMR	Very high	Yes	Take of all living marine resources is prohibited.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.

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MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Gorda SMR	N/A	Expansion of existing MPA. Protects special habitat for rare blue coral and other unique marine species. This stretch of remote Northern California coastline, is the point furthest west in the state. It has a variety of diverse habitats including upwelling zones, submarine canyons, reef structures, and improves study opportunities provided by marine ecosystems that are subject to minimal human impacts.	Captures off-shore marine canyons on both sides of the bio-regional split. Meets or exceeds sizing guidelines and spacing criterion.
Big Flat SMCA	N/A	Sandy shore, remote, surfing location, rocky habitat with kelp beds. The Shipman Creek-Delgada Canyon offshore is nearest deep-water trench to shoreline in Northern California which provides significant upwelling. This SMCA is specifically designed to enhance and preserve rock fish habitat while at the same time posing, due to its remote location, little or no socioeconomic impacts to commercial or recreational fishermen.	Remote location with little onshore fishing. Captures existing Essential Fish Habitat Conservation Area. Canyon upwelling exists here, as do rocky shorelines and kelp beds. Meets size guidelines and replicates hard bottom nearshore habitat to the south.
Usal SMR	N/A	Remote section rarely visited. Rocky shoreline. Marine mammal haul outs and bird nesting sites. Protect areas of near-shore rock fishes, lingcod, cabezon, kelp greenling, surf perch, kelp, mussels, Dungeness crab. Meets or exceeds goals 1, 2, 4, & 6. This high level reserve is at a pivotal point in the Mendocino County portion of the bio-region in that it exists near the center of the area and is positioned to capture and protect several key habitats defined by the SAT. The bio-diversity of this area is very high.	<p>Area use is limited due to distance to nearest harbor and few access points, but captures both rocky shoreline and good bird and mammal habitat. Factored into this reserve is the distance to Fort Bragg/Noyo harbor for urchin divers. While this area is currently being lightly used for that purpose, because of its distance to the harbor it is less important than urchin habitat closer to Noyo. Additionally, since this reserve covers the beach area at Usal, traditional native uses such as surf fishing with hand nets from the beach may be an exception to the no-take restrictions in the rest of this reserve.</p> <p>Examples of species most likely to benefit: nearshore, shelf & deeper nearshore rockfishes, lingcod, cabezon, kelp greenling, surfperches, kelp, Dungeness crab, murrelets, guillemots, cormorants, halibut, harbor seals, sealions, sharks, mussels, forage fishes, invertebrates & algae.</p> <p>MPA meets SAT guidelines at the Very High level of protection.</p>
Ten Mile River Estuary SMR	N/A	Estuary protection in reserve. Goals 1, 2, 3, 4, and 6. All species protected from take. Shorebird and mammal habitat protected. Anadromous fish refugia preserved.	Scenic area with many shorebirds.

SMCA=state marine conservation area SMP=state marine park SMRMA=state marine recreational management area SMR=state marine reserve TBD=to be determined

* Levels of protection assigned do not take into account proposed Tribal uses.

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
MacKerricher SMCA	74062	Southern Bioregion	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 29.81' N. lat. 123o 47.50' W. long.; 39o 29.95' N. lat. 123o 47.80' W. long.; 39o 27.62' N. lat. 123o 48.80' W. long.; and 39o 27.55' N. lat. 123o 48.52' W. long.	SMCA	Low	No	The take of all living marine resources is prohibited except: 1. The recreational take of Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels.. 2. The commercial take of Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, squid, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None
Point Cabrillo Offshore SMCA	73925	Southern Bioregion	Northern Boundary = 39 21'7" (South Caspar Point) Southern Boundary = 39 19.5' (North Point Russian Gulch) Eastern Boundary = 123 51'W	SMCA	High	No	The take of all living marine resources is prohibited except: 1. The recreational take of salmon by troll. 2. The commercial take of salmon by troll.	None specified

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* Levels of protection assigned do not take into account proposed Tribal uses.

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
MacKerricher SMCA	N/A	None	None
Point Cabrillo Offshore SMCA	N/A	Conservation area offshore of reserve. This SMCA works in conjunction with the contiguous SMR to the east, acting a excellent support though a no rock-fish capture restriction. Rocky habitat and sea stack formation are found in this area.	Expands existing SMCA at Point Cabrillo south to south of Mendocino. Allows salmon fishermen access to upwelling spot within trolling proximity to two harbors, Albion and Noyo. Commercial and recreational salmon trolling and salmon take allowed. All other fin fish species protected.

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Point Cabrillo SMR	73936	Southern Bioregion	Northern Boundary = 39 21'7"N (South Caspar Point) Southern Boundary = 39 19.5" (North Point Russian Gulch) Western Boundary = 123 51'W	SMR	Very high	Yes	Take of all living marine resources is prohibited.	No extraction of any species allowed. All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.
Point Cabrillo SMR (continued)								
Big River Estuary SMP	73933	Southern Bioregion	Entire estuary from the mouth of Big River to the extent of high tide influence approximately five miles inland.	SMP	High	Yes	Take of all living marine resources is prohibited.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Point Cabrillo SMR	N/A	<p>This expansion of the Point Cabrillo SMCA adds important protection to rocky shorelines, fin fish habitat, kelp beds, abalone beds. Improves recreational, educational, and study opportunities due to its easy accessibility.</p> <p>Goals 1, 2 and 4</p>	<p>Easy access near State Protected area. Area currently under study for urchin and abalone density/population data. Coastal habitat for kelp beds that is not used by harvesters is difficult to find along the Mendocino Coast. Thus, given the need to place an MPA somewhere within 60 miles of the Point Area MPA, the logical place for a reserve is near the existing Point Cabrillo SMCA. By expanding southward, several important key habitats are captured: rocky shorelines, coastal estuary, beaches, and hard and soft substrata. Replication dictates this placement which took into account the socio-economic impacts it would have on kelp harvesters and recreational impacts to abalone divers. Nevertheless, to off-set loss of income, a preserve such as this one could act as a major visitor attraction as it would be one of the most accessible preserved free diving and SCUBA entry points of this habitat type on the west coast.</p>
Point Cabrillo SMR (continued)			<p>Additionally, research and study opportunities would abound: abalone, urchin, inter-tidal invertebrates, bird and mammal studies all have potential to exist here. This SMR incorporates the existing SMCA inside the bay at Russian Gulch but leave the majority of the bay open for abalone diving and urchin harvest.</p> <p>Examples of species most likely to benefit: nearshore, shelf & deeper nearshore rockfishes, lingcod, cabezon, kelp greenling, surfperches, kelp, cormorants, harbor seals, sealions, mussels, forage fishes, invertebrates & algae.</p> <p>Meets MLPA goals for High Level of Protection.</p>
Big River Estuary SMP	N/A	<p>Estuary habitat preserved; eel grass beds; anadromous fish refugia. Satisfies Goals 1,2,3,4,6.</p>	<p>Within State Parks boundaries. Key recreational kayaking area. A boost to local economy because estuary is protected. Shorebird habitat protected.</p>

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	MPA ID	Bioregion	MPA Boundaries (Exact or Approximate)	Designation	Level of Protection*	Propose Tribal Uses?	Proposed Take Regulations	Other Proposed Regulations
Van Damme SMCA	74065	Southern Bioregion	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 16.45' N. lat. 123o 47.60' W. long.; 39o 16.355' N. lat. 123o 47.60' W. long.; 39o 16.27' N. lat. 123o 47.545' W. long.; and 39o 16.27' N. lat. 123o 47.43' W. long.	SMCA	Low	No	The take of all living marine resources is prohibited except: 1. The recreational take of Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels. 2. The commercial take of Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None
Albion River Estuary SMP	73930	Southern Bioregion	From Schooner's Landing Campground east three miles in tidal waters of estuary.	SMP	Moderate low	Yes	Closed to all species take except hoop ring capture of Dungeness crab, and fishing for surf perch from shore or from canoe or kayak for recreational purposes.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.
Navarro River Estuary SMR	73934	Southern Bioregion	Mouth of the Navarro to three miles inland in estuary waters effected by tidal influence.	SMR	Very high	Yes	Take of all living marine resources is prohibited.	All traditional native tribal rights for access and collection of plants and fish species are to be allowed in this area.

SMCA=state marine conservation area SMP=state marine park SMRMA=state marine recreational management area SMR=state marine reserve TBD=to be determined

* Levels of protection assigned do not take into account proposed Tribal uses.

California MLPA North Coast Study Region
Description of Marine Protected Areas (MPAs) in Array D
Document Revised February 17, 2010

MPA Name	Regional Goals/Objectives	Site-specific Rationale	Other Considerations
Van Damme SMCA	N/A	None	None
Albion River Estuary SMP	N/A	Estuary protection (Goals 1, 2, 3, 4 & 6). Eel grass and anadromous fish refugia.	Recreational Kayaking area protected. Shorebird habitat protected. Boost to local economy for scenic and recreational attributes. Allows sport take of Dungeness crab, and perch by anglers from canoe or kayak.
Navarro River Estuary SMR	N/A	Estuary protection (Goals 1.2.3.4 & 6) All species protected as well as prime shorebird habitat and anadromous fish refugia.	Recreational kayaking and canoeing destination. Attraction to easy proximity to State Park beach and shorebird and mammal viewing.

California Marine Life Protection Act Initiative
North Coast Study Region
Consideration of Existing Marine Protected Areas
Revised January 12, 2010

Please indicate how each to the five existing marine protected areas (MPAs) in the MLPA North Coast Study Region listed below should be addressed. You may propose that the existing MPA be retained without change, be retained with changes to either the boundaries or regulations, or removed. Please also describe the rationale for your proposed action in the space provided. For your reference, the existing regulations and boundaries for these MPAs are included in Tables 1 and 2.

Existing MPA	Retain (no changes to boundaries or regulations)	Modify (included with boundary or regulation change)	Remove (not included)	Rationale for Decision
Punta Gorda SMR		Expands existing MPA-north, west, and south		Needed for replication of habitat
MacKerricher SMCA	No changes			Study area near campground
Point Cabrillo SMCA		Expands existing MPA north, west, south. Clusters onshore SMR & offshore SMCA		Control area for urchin harvest study
Russian Gulch SMCA		Incorporates existing MPA into new expanded Pt. Cabrillo Reserve		Control area for urchin harvest study
Van Damme SMCA	No changes			Study are near campground

SMR = State Marine Reserve, SMCA = State Marine Conservation Area

Table 1. Regulation summary for existing state MPAs in the north coast study region.

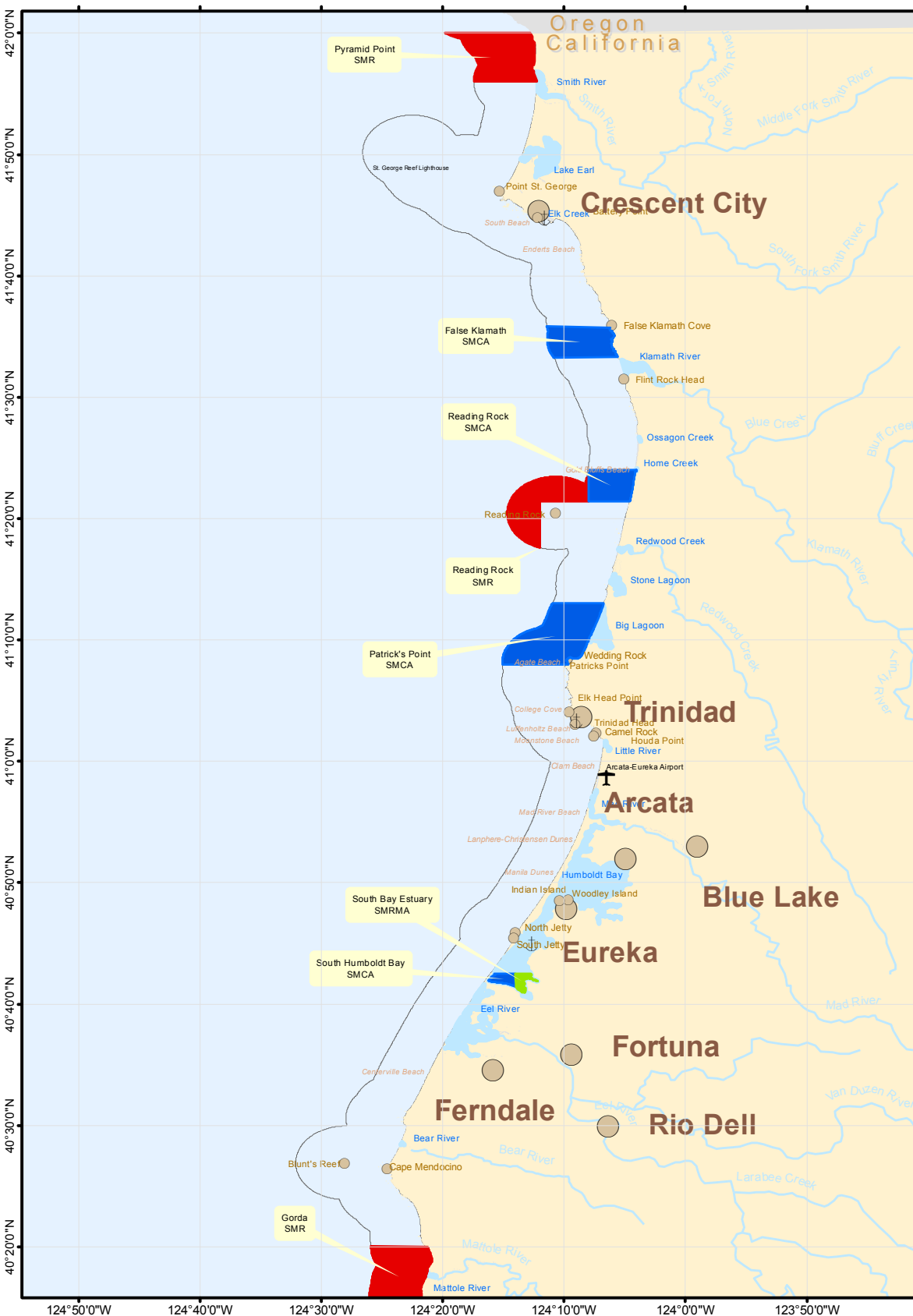
MPA Name	Allowed Take: Recreational	Allowed Take: Commercial	Other Restrictions
Punta Gorda SMR	Take of all living marine resources is prohibited.	Take of all living marine resources is prohibited.	Other restrictions exist regarding: swimming, boating, firearms, public entry, pesticides, herbicides and other regulated chemicals, litter, aircraft, pets, potential memorandums of understanding, and scientific research.
MacKerricher SMCA	Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels.	Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, squid, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None
Point Cabrillo SMCA	None	Finfish and marine aquatic plants.	None
Russian Gulch SMCA	Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels.	Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None
Van Damme SMCA	Finfish, red abalone, chiones, clams, cockles, rock scallops, native oysters, crabs, lobster, ghost shrimp, sea urchins, mussels and marine worms except that no worms may be taken in any mussel bed unless taken incidentally to the take of mussels.	Finfish, crabs, ghost shrimp, jackknife clams, sea urchins, algae except giant kelp and bull kelp and worms except that no worms may be taken in any mussel bed, nor may any person pick up, remove, detach from the substrate any other organisms, or break up, move or destroy any rocks or other substrate or surfaces to which organisms are attached.	None

Table 2. Boundaries for existing state MPAs in the north coast study region.

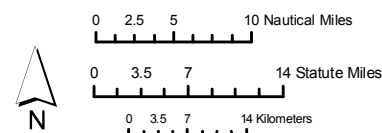
MPA Name	Boundaries
Punta Gorda SMR	This area is bounded by the three-fathom inshore depth contour, the 30- fathom depth contour and the following points: 40o 16.43' N. lat. 124o 22.00' W. long.; 40o 16.43' N. lat. 124o 23.50' W. long.; 40o 14.83' N. lat. 124o 23.18' W. long.; and 40o 15.23' N. lat. 124o 21.62' W. long.
MacKerricher SMCA	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 29.81' N. lat. 123o 47.50' W. long.; 39o 29.95' N. lat. 123o 47.80' W. long.; 39o 27.62' N. lat. 123o 48.80' W. long.; and 39o 27.55' N. lat. 123o 48.52' W. long.
Point Cabrillo SMCA	This area is bounded by the mean high tide line, a distance of 1000 feet seaward of mean lower low water, and the following points: 39o 21.24' N. lat. 123o 49.25' W. long.; 39o 21.33' N. lat. 123o 49.64' W. long.; 39o 20.66' N. lat. 123o 49.68' W. long.; and 39o 20.57' N. lat. 123o 49.27' W. long.
Russian Gulch SMCA	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 19.86' N. lat. 123o 48.84' W. long.; 39o 19.85' N. lat. 123o 48.89' W. long.; 39o 19.52' N. lat. 123o 48.46' W. long.; and 39o 19.52' N. lat. 123o 48.23' W. long.
Van Damme SMCA	This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points: 39o 16.45' N. lat. 123o 47.60' W. long.; 39o 16.355' N. lat. 123o 47.60' W. long.; 39o 16.27' N. lat. 123o 47.545' W. long.; and 39o 16.27' N. lat. 123o 47.43' W. long.

MLPA North Coast Study Region Round 1 - North Coast External Proposed MPA Array D

Northern Bioregion (Oregon/California border to Mattole River)



California Marine Life Protection Act (MLPA) Initiative



Date: 16 February 2010

Created by:
Marine Map Cartographic Division, UCSB.

For more information visit:
<http://www.northcoast.marinemap.org/marinemap/>



Disclaimer:

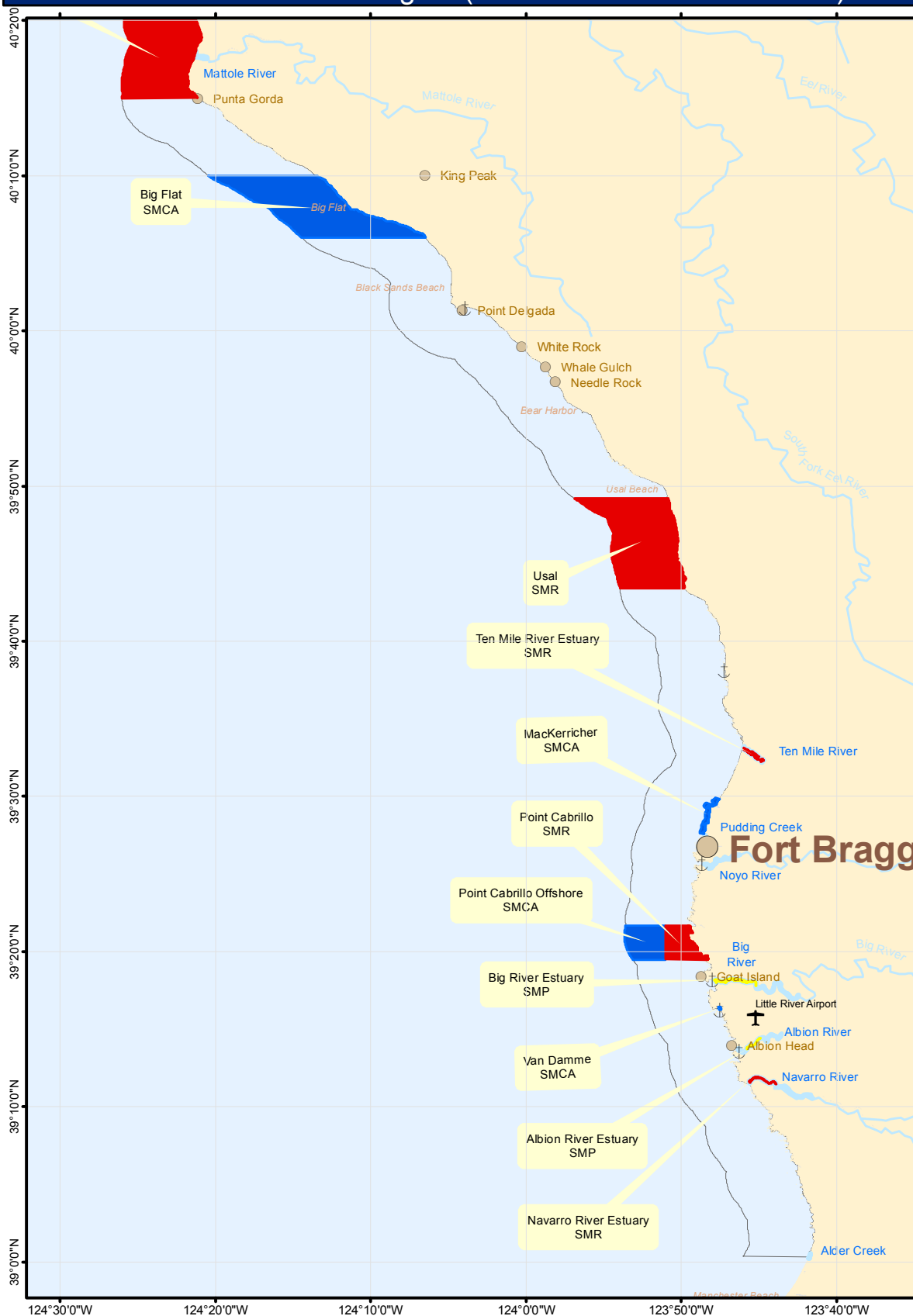
This map represents a proposed external marine protected area (MPA) array that has been submitted by a north coast community group or groups for consideration in the MLPA planning process. This external MPA array is under review; it is NOT a recommendation to the California Fish and Game Commission.

Legend

- | | | |
|------------------------------------------------------------|-----------|---------------|
| North Coast Study Region Boundary | Estuaries | Lighthouse |
| Proposed State Marine Reserve (SMR) | Rivers | Airport |
| Proposed State Marine Conservation Area (SMCA) | | Coastal Point |
| Proposed State Marine Park (SMP) | | Major City |
| Proposed State Marine Recreational Management Area (SMRMA) | | Ports |

MLPA North Coast Study Region Round 1 - North Coast External Proposed MPA Array D

Southern Bioregion (Mattole River to Alder Creek)



California Marine Life Protection Act (MLPA) Initiative



Date: 18 February 2010

Created by:
Marine Map Cartographic Division, UCSB.

For more information visit:
<http://www.northcoast.marinemap.org/marinemap/>



Disclaimer:

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Legend

- | | | |
|------------------------------------------------------------|-----------|---------------|
| North Coast Study Region Boundary | Estuaries | Lighthouse |
| Proposed Marine Protected Area Array | Rivers | Airport |
| Proposed State Marine Reserve (SMR) | | Coastal Point |
| Proposed State Marine Conservation Area (SMCA) | | Major City |
| Proposed State Marine Park (SMP) | | Ports |
| Proposed State Marine Recreational Management Area (SMRMA) | | |

California MLPA North Coast Project
Habitat Calculations for North Coast External Proposed MPA Array D (ExD)
Document Revised on: March 3, 2010

	How Measured	Total Available Habitat	Pyramid Point SMR	False Klamath SMCA	Reading Rock SMR	Reading Rock SMCA	Patrick's Point SMCA
MPA ID			73927	73924	73931	73932	73921
MPA Designation			SMR	SMCA	SMR	SMCA	SMCA
Level of Protection			Very high	Moderate high	Very high	Moderate high	Moderate high
SAT Evaluation Bioregion			Northern	Northern	Northern	Northern	Northern
Area	sq miles	1,027.23	20.99	13.14	18.64	9.52	26.70
Alongshore Span	miles	NA	4.66	2.91	6.34	2.98	6.49
ESI Shoreline	miles	516.66	1.38	3.83	0.00	3.04	7.49
Min Depth	feet	0.00	0.00	0.00	90.00	0.00	0.00
Max Depth	feet	1,667.00	124.00	121.00	253.00	101.00	256.00
Beaches	miles	180.42	0.20	2.76	0.00	3.04	5.93
Rocky Shores	miles	159.08	1.18	1.07	0.00	0.00	1.56
Hardened Shores	miles	22.10	0.00	0.00	0.00	0.00	0.00
Coastal Marsh	miles	88.60	0.00	0.00	0.00	0.00	0.00
Coastal Marsh (area)	sq miles	3.51	0.00	0.00	0.00	0.00	0.00
Tidal Flats	miles	66.46	0.00	0.00	0.00	0.00	0.00
Humboldt Eelgrass	sq miles	7.07	0.00	0.00	0.00	0.00	0.00
Estuary	sq miles	43.49	0.00	0.00	0.00	0.00	0.00
Offshore Rocks	miles	140.73	2.53	0.97	0.00	0.00	1.03
Linear Kelp	miles	52.10	0.00	0.00	0.00	0.00	0.00
Hard (0 - 30m) Proxy	miles	54.01	0.43	0.39	0.00	0.00	0.28
Hard (0 - 30m)	sq miles	42.32	0.99	0.55	0.00	0.00	0.18
Hard (30 - 100m)	sq miles	45.08	0.00	0.00	0.38	0.00	0.00
Hard (100 - 200m)	sq miles	0.99	0.00	0.00	0.00	0.00	0.00
Hard (> 200m)	sq miles	0.09	0.00	0.00	0.00	0.00	0.00
Soft (0 - 30m) Proxy	miles	159.39	4.21	2.47	0.00	3.02	6.06
Soft (0 - 30m)	sq miles	252.26	14.80	6.37	0.17	7.91	11.10
Soft (30 - 100m)	sq miles	420.79	2.53	5.39	18.06	0.12	12.70
Soft (100 - 200m)	sq miles	62.48	0.00	0.00	0.00	0.00	0.00
Soft (> 200m)	sq miles	7.67	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m) Proxy	miles	19.10	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m)	sq miles	164.96	2.39	0.81	0.00	1.48	2.71
Unknown (30 - 100m)	sq miles	26.74	0.28	0.02	0.03	0.00	0.00
Unknown (100 - 200m)	sq miles	0.15	0.00	0.00	0.00	0.00	0.00
Unknown (> 200m)	sq miles	0.20	0.00	0.00	0.00	0.00	0.00

California MLPA North Coast Project
Habitat Calculations for North Coast External Proposed MPA Array D (ExD)
Document Revised on: March 3, 2010

	South Humboldt Bay SMCA	South Bay Estuary SMRMA	Gorda SMR	Big Flat SMCA	Usal SMR	Ten Mile River Estuary SMR	MacKerricher SMCA
MPA ID	73922	73923	73929	73928	73926	73935	74062
MPA Designation	SMCA	SMRMA	SMR	SMCA	SMR	SMR	SMCA
Level of Protection	Moderate	Very high	Very high	Moderate high	Very high	Very high	Low
SAT Evaluation Bioregion	Northern	Northern	Southern	Southern	Southern	Southern	Southern
Area	1.60	1.20	22.73	26.71	26.30	0.18	0.72
Alongshore Span	N/A	N/A	5.78	6.85	6.79	N/A	3.02
ESI Shoreline	2.99	6.07	6.62	8.23	9.27	2.94	4.50
Min Depth	N/A	N/A	0.00	0.00	0.00	N/A	0.00
Max Depth	N/A	N/A	1667.00	1110.00	394.00	N/A	38.00
Beaches	0.00	0.00	3.30	5.71	4.49	0.30	1.57
Rocky Shores	0.28	0.00	3.32	2.52	4.79	0.34	2.93
Hardened Shores	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coastal Marsh	1.63	1.29	0.00	0.00	0.00	2.30	0.00
Coastal Marsh (area)	0.04	0.05	0.00	0.00	0.00	0.05	0.00
Tidal Flats	1.08	4.79	0.00	0.00	0.00	0.00	0.00
Humboldt Eelgrass	0.33	0.08	0.00	0.00	0.00	0.00	0.00
Estuary	1.60	1.20	0.00	0.00	0.00	0.18	0.00
Offshore Rocks	0.00	0.00	0.98	0.18	3.77	0.00	3.56
Linear Kelp	0.00	0.00	0.38	1.97	2.08	0.00	0.00
Hard (0 - 30m) Proxy	0.00	0.00	2.41	0.50	2.07	0.00	0.00
Hard (0 - 30m)	0.00	0.00	1.31	0.28	1.15	0.00	0.09
Hard (30 - 100m)	0.00	0.00	1.92	0.06	0.12	0.00	0.00
Hard (100 - 200m)	0.00	0.00	0.27	0.01	0.00	0.00	0.00
Hard (> 200m)	0.00	0.00	0.05	0.01	0.00	0.00	0.00
Soft (0 - 30m) Proxy	0.00	0.00	3.89	7.63	4.72	0.00	0.00
Soft (0 - 30m)	0.00	0.00	1.60	4.39	4.76	0.00	0.04
Soft (30 - 100m)	0.00	0.00	9.78	12.54	14.96	0.00	0.00
Soft (100 - 200m)	0.00	0.00	3.21	7.22	3.88	0.00	0.00
Soft (> 200m)	0.00	0.00	2.40	0.59	0.00	0.00	0.00
Unknown (0 - 30m) Proxy	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m)	1.60	1.20	2.18	1.60	1.43	0.18	0.59
Unknown (30 - 100m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (100 - 200m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (> 200m)	0.00	0.00	0.02	0.00	0.00	0.00	0.00

California MLPA North Coast Project
Habitat Calculations for North Coast External Proposed MPA Array D (ExD)
Document Revised on: March 3, 2010

	Point Cabrillo Offshore SMCA	Point Cabrillo SMR	Big River Estuary SMP	Van Damme SMCA	Albion River Estuary SMP	Navarro River Estuary SMR
MPA ID	73925	73936	73933	74065	73930	73934
MPA Designation	SMCA	SMR	SMP	SMCA	SMP	SMR
Level of Protection	High	Very high	High	Low	Moderate low	Very high
SAT Evaluation Bioregion	Southern	Southern	Southern	Southern	Southern	Southern
Area	5.69	4.21	0.22	0.02	0.05	0.09
Alongshore Span	2.53	2.53	N/A	0.20	N/A	N/A
ESI Shoreline	0.00	9.30	5.70	0.35	0.00	1.58
Min Depth	276.00	0.00	N/A	0.00	N/A	N/A
Max Depth	404.00	306.00	N/A	11.00	N/A	N/A
Beaches	0.00	0.00	1.05	0.35	0.00	0.00
Rocky Shores	0.00	9.30	0.82	0.00	0.00	0.61
Hardened Shores	0.00	0.00	0.00	0.00	0.00	0.00
Coastal Marsh	0.00	0.00	3.55	0.00	0.00	0.64
Coastal Marsh (area)	0.00	0.00	0.04	0.00	0.00	0.01
Tidal Flats	0.00	0.00	0.28	0.00	0.00	0.33
Humboldt Eelgrass	0.00	0.00	0.00	0.00	0.00	0.00
Estuary	0.00	0.00	0.22	0.00	0.05	0.09
Offshore Rocks	0.00	5.56	0.00	0.10	0.00	0.00
Linear Kelp	0.00	2.27	0.00	0.00	0.00	0.00
Hard (0 - 30m) Proxy	0.00	1.49	0.00	0.00	0.00	0.00
Hard (0 - 30m)	0.00	0.85	0.00	0.00	0.00	0.00
Hard (30 - 100m)	0.10	0.05	0.00	0.00	0.00	0.00
Hard (100 - 200m)	0.04	0.00	0.00	0.00	0.00	0.00
Hard (> 200m)	0.00	0.00	0.00	0.00	0.00	0.00
Soft (0 - 30m) Proxy	0.00	1.17	0.00	0.00	0.00	0.00
Soft (0 - 30m)	0.00	0.87	0.00	0.00	0.00	0.00
Soft (30 - 100m)	1.60	1.97	0.00	0.00	0.00	0.00
Soft (100 - 200m)	3.94	0.00	0.00	0.00	0.00	0.00
Soft (> 200m)	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m) Proxy	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (0 - 30m)	0.00	0.47	0.20	0.02	0.05	0.09
Unknown (30 - 100m)	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (100 - 200m)	0.00	0.00	0.00	0.00	0.00	0.00
Unknown (> 200m)	0.00	0.00	0.00	0.00	0.00	0.00